

CLAIMS

What is claimed is:

Sub B1 > 1. A network device which supports Mobile IP and is configured to send an accounting request, the accounting request identifying a mobile node, the network device comprising:

a memory; and

a processor coupled to the memory, wherein the network device is adapted for updating a counter associated with the mobile node's activity, the network device adapted for sending the accounting request including the counter to a server adapted for recording accounting information associated with the mobile node.

Sub D2 > 2. The network device as recited in claim 1, wherein the counter indicates at least one of a number of packets received by the mobile node and a number of packets sent from the mobile node.

Sub B2 > 3. A server configured to receive an accounting request from a network device which supports Mobile IP, the accounting request identifying a mobile node, the server comprising:

a memory; and

a processor coupled to the memory, wherein the server is adapted for storing accounting information for a plurality of mobile nodes and logging accounting information associated with the mobile node in response to the accounting request, the accounting request including at least one counter associated with the accounting information.

4. The server as recited in claim 3, wherein the server is adapted for sending an accounting reply to the network device in response to the accounting request, the accounting reply acknowledging logging of the accounting information pertaining to the mobile node.
5. The server as recited in claim 3, wherein the counter indicates a number of packets that have been sent to the mobile node.
6. The server as recited in claim 3, wherein the counter indicates a number of packets that have been sent from the mobile node.
7. The server as recited in claim 3, wherein the counter indicates a number of registrations that have been accepted.
8. The server as recited in claim 3, wherein the counter indicates a total service time for the mobile node.
9. The server as recited in claim 3, wherein the counter indicates at least one of a number of bytes that have been sent to the mobile node and a number of bytes that have been sent from the mobile node.
10. The server as recited in claim 3, wherein the plurality of mobile nodes are associated with a plurality of network devices.

11. The server as recited in claim 3, wherein the network device is a Home Agent or a Foreign Agent.

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12. The server as recited in claim 3, wherein the server is a TACACS+ or a RADIUS server.

Sub B³

13. In a network device which supports Mobile IP, a method of updating accounting information for a mobile node operating according to Mobile IP Protocol, comprising:

composing a request packet for the mobile node, the request packet identifying the mobile node and including at least one counter associated with accounting information pertaining to the mobile node; and

sending the request packet to a server adapted for performing accounting.

14. The method as recited in claim 13, further including:

receiving a reply packet for the mobile node identified in the request packet, the reply packet acknowledging logging of the accounting information pertaining to the mobile node.

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15. The method as recited in claim 13, wherein the request packet includes at least one counter associated with the accounting information.

16. The method as recited in claim 13, wherein the counter indicates a number of packets that have been sent to the mobile node.

17. The method as recited in claim 13, wherein the counter indicates a number of packets that have been sent from the mobile node.

18. The method as recited in claim 13, wherein the counter indicates a number of registrations that have been accepted.

19. The method as recited in claim 13, wherein the counter indicates a total service time for the mobile node

20. The server as recited in claim 13, wherein the counter indicates at least one of a number of bytes that have been sent to the mobile node and a number of bytes that have been sent from the mobile node.

21. The method as recited in claim 13, wherein the network device is a Home Agent or a Foreign Agent.

22. The method as recited in claim 13, wherein the server is a TACACS+ or a RADIUS server.

Sub B5 23. The method as recited in claim 13, further including:

receiving a data packet from the mobile node, wherein composing the request packet is performed in response to receiving the data packet.

24. The method as recited in claim 23, further including:

forwarding the data packet to another network device.

Sub B5 25. The method of claim 13, wherein composing a request packet for the mobile node is triggered by an accounting event.

26. The method of claim 25, wherein the accounting event is a new registration or the termination of a registration.

Sub B6 27. In a server, a method of updating accounting information for a mobile node operating according to Mobile IP Protocol, comprising:

receiving a request packet from a network device operating under Mobile IP Protocol, the request packet identifying the mobile node and including at least one counter associated with accounting information pertaining to the mobile node; and

logging the accounting information for the mobile node.

28. The method as recited in claim 27, further including:

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sending a reply packet for the mobile node identified in the request packet, the reply packet acknowledging logging of the accounting information pertaining to the mobile node.

29. The method as recited in claim 27, further including:

generating a bill for Mobile IP services from the accounting information.

30. The method as recited in claim 27, wherein the counter indicates a number of packets that have been sent to the mobile node.

31. The method as recited in claim 27, wherein the counter indicates a number of packets that have been sent from the mobile node.

32. The method as recited in claim 27, wherein the counter indicates a number of registrations that have been accepted.

33. The method as recited in claim 27, wherein the counter indicates a total service time for the mobile node

34. The server as recited in claim 27, wherein the counter indicates at least one of a number of bytes that have been sent to the mobile node and a number of bytes that have been sent from the mobile node.

35. The method as recited in claim 27, wherein the network device is a Home Agent or a Foreign Agent.

36. The method as recited in claim 27, wherein the server is a TACACS+ or a RADIUS server.

37. A computer-readable medium having thereon computer readable instructions for updating accounting information for a mobile node, the instructions comprising:

instructions for composing a request packet for the mobile node, the request packet identifying the mobile node and including at least one counter associated with accounting information pertaining to the mobile node; and

instructions for sending the request packet to a server adapted for performing accounting.

38. The computer-readable medium as recited in claim 37, further including:

instructions for receiving a reply packet for the mobile node identified in the request packet, the reply packet acknowledging logging of the accounting information for the mobile node.

39. A computer-readable medium having thereon computer readable instructions for updating accounting information for a mobile node, the instructions comprising:

instructions for logging the accounting information for the mobile node.

instructions for sending a reply packet for the mobile node identified in the request packet, the reply packet acknowledging logging of the accounting information for the mobile node.